Written Amendment

(Amendment based on Section 11)

To Mr. Hiroshi YAMAMURA, Examiner at the Patent Office

1. Identification of the International Application
PCT/JP2004/000667

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4. Object of Amendment: Claims

5. Contents of Amendment

(1) Claims 1 and 19 are amended as indicated in the attached sheets.
(2) Claims 11 and 13 are cancelled as indicated in the attached sheets.
(3) Claims 24–30 are added as indicated in the attached sheets.

6. List of appended documents

New sheets 53–56 and 56-1 of Claims 1 set

CLAIMS

1. (Amended) A retardation film comprising an optically anisotropic layer and a retardation layer, the retardation layer comprising an aligned liquid crystalline compound,

wherein the optically anisotropic layer contains at least one material selected from the group consisting of polyamide, polyimide, polyester, poly(etherketone), poly(amide-imide), and poly(ester-imide),

the optically anisotropic layer is formed on a transparent base, and

the retardation layer is laminated directly on the optically anisotropic layer.

2. The retardation film according to claim 1, wherein the optical retardation layer further comprises an aligned polymer.

3. The retardation film according to claim 1, wherein the liquid crystalline compound has an alignment direction inclined with respect to a face direction of the optically anisotropic layer.

4. The retardation film according to claim 1, wherein the liquid crystalline compound has an alignment direction varying depending on a position in the thickness direction of the optical retardation layer.

5. The retardation film according to claim 1, wherein a vector component in a face direction of the optically anisotropic layer, which composes a vector in the alignment direction of the liquid crystalline compound, crosses at right angles an optical axis of the optically anisotropic layer.

6. The retardation film according to claim 1, wherein the optical retardation layer has a positive uniaxial refractive index anisotropy.

7. The retardation film according to claim 1, wherein the liquid crystalline compound has a crosslinking structure.

8. The retardation film according to claim 1, wherein the liquid crystalline compound comprises a nematic liquid crystalline compound.

9. The retardation film according to claim 1, wherein the optically anisotropic layer has a negative uniaxial refractive index anisotropy.

10. The retardation film according to claim 1, wherein the optically anisotropic layer has a biaxial refractive index anisotropy.

11. (Cancelled)

12. The retardation film according to claim 1, wherein the optically anisotropic layer comprises polyimide.

13. (Cancelled)

14. An optical element comprising the retardation film according to claim 1 and a polarizer.

15. The optical element according to claim 14, further comprising a transparent protective film, and the transparent protective film is sandwiched between the retardation film and the polarizer.

16. The optical element according to claim 14, wherein the polarizer is a stretched polymer film.

17. The optical element according to claim 14, wherein the polarizer is a polyvinyl alcohol–based polarizing film.

18. An image display apparatus comprising the retardation film according to claim 1 or the optical element according to claim 14.

19. (Amended) A method for producing a retardation film, the method comprising steps of:

applying a solution containing at least one material selected from the group consisting of polyamide, polyimide, polyester, poly(etherketone), poly(amide-imide), and poly(ester-imide),

drying the solution so as to form an optically anisotropic layer,

applying a solution that contains a liquid crystalline compound and a polymer to react with polarized ultraviolet light, onto the optically anisotropic layer;

drying the solution so as to form a precursor layer of a retardation layer; and

irradiating a surface of the precursor layer with polarized ultraviolet light.

20. The method for producing a retardation film according to claim 19, further comprising a step of crosslinking the liquid crystalline compound.

21. The method for producing a retardation film according to claim 19, further comprising a step of irradiating the surface of the precursor layer with unpolarized ultraviolet light.

22. A method for producing an optical element, the method comprising steps of:

preparing a retardation film produced according to the producing

method of claim 19 and a polarizer, and applying an adhesive onto at least either the retardation film or the polarizer;

drying the adhesive; and

bonding the retardation film and the polarizer via a surface applied with the adhesive.

23. A method for producing an optical element, the method comprising steps of:

preparing the retardation film produced according to the producing method of claim 19 and a polarizer having a transparent protective film adhered, and applying an adhesive onto at least either the retardation film or the transparent protective film;

drying the adhesive; and

bonding the retardation film and the transparent protective film via a surface applied with the adhesive.

24. (New) A method for producing a retardation film according to claim 19, further comprising a step of stretching or shrinking the optically anisotropic layer together with the transparent base.

25. (New) A method for producing a retardation film, the method comprising steps of:

stretching or shrinking an optically anisotropic layer together with a base on which the optically anisotropic layer is formed;

applying a solution that contains a liquid crystalline compound and a polymer that reacts with polarized ultraviolet light, onto the optically anisotropic layer;

drying the solution so as to form a precursor layer of a retardation layer; and

irradiating a surface of the precursor layer with polarized ultraviolet

light.

26. (New) The method for producing a retardation film according to claim 25, wherein the base is a transparent base.

27. (New) The method for producing a retardation film according to claim 25, further comprising a step of crosslinking the liquid crystalline compound.

28. (New) The method for producing a retardation film according to claim 25, further comprising a step of irradiating the surface of the precursor layer with unpolarized ultraviolet light.

29. (New) A method for producing an optical element, the method comprising steps of:

preparing a retardation film produced by the method according to claim 25 and a polarizer, and applying an adhesive onto at least one of the retardation film and the polarizer;

drying the adhesive; and

bonding the retardation film and the polarizer via a surface applied with the adhesive.

30. (New) A method for producing an optical element, the method comprising steps of:

preparing a retardation film produced by the method according to claim 25 and a polarizer to which a transparent protective film is adhered, and applying an adhesive onto at least one of the retardation film and the transparent protective film;

drying the adhesive; and

bonding the retardation film and the transparent protective film via a surface applied with the adhesive.